Clinical applicability of a point of care patient side canine-specific commercially available quantitative assay for determination of c-reactive protein

Kjelgaard-Hansen, Mads

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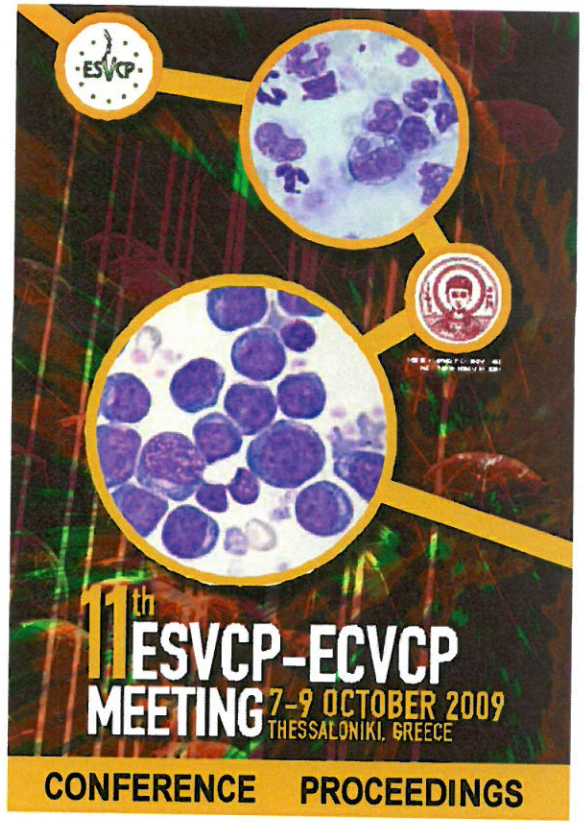
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1. CLINICAL APPLICABILITY OF A POINT OF CARE PATIENT SIDE CANINE SPECIFIC COMMERCIALLY AVAILABLE QUANTITATIVE ASSAY FOR DETERMINATION OF C REACTIVE PROTEIN.

M. Kjelgaard-Hansen.

Department of Small Animal Clinical Sciences, University of Copenhagen, Copenhagen, Denmark.

Background: Canine C-reactive protein (CRP) is a major acute phase protein in dogs, and is reported as a sensitive, specific and quantitative marker of systemic inflammation. Canine CRP is especially useful for detection of inflammation during establishment of diagnosis and for monitoring inflammatory activity during treatment. Laboratory-based methods are available; however, reliable quantitative methods for patient-side operation are warranted. **Objective:** Evaluation of a novel point of care (POC) canine-specific commercially available quantitative assay for determination of CRP. **Methods:** CRP was determined by a commercially available magnetic permeability based two-site immunoassay for canine C-reactive protein (LifeAssays, Sweden). Intra- and inter-assay imprecision was assessed by running pooled canine serum with low (37 mg/L) and high (89 mg/L) concentrations of CRP repetitively (n=7) within-day and across days, respectively. Linearity was investigated by an equal-step dilution (n=8) of a high content sample (180 mg/L). Inaccuracy was investigated by method comparison (range 10-182.4 mg/L, n=17) and by 'spike and recovery'. A previously validated automated immunoturbidimetric assay (Kjelgaard-Hansen et al., 2003) was used for the method comparison. Purified canine CRP (LifeDiagnostics, USA) was used to spike the low pool to final concentrations of A)103 mg/L and B)152 mg/L. **Results:** Acceptable intra-assay coefficient of variation (CV %) (9.6% and 8.5%) and inter-assay imprecision (12% and 11%) was observed for the low and high pool, respectively. Linearity was acceptable. Method comparison revealed a proportional overestimation above 100 mg/L, confirmed by recoveries of 115% and 127% for A and B, respectively. **Conclusions:** The quantitative patient- side POC canine specific CRP assay performed acceptably for clinical purposes; however, direct comparison with results obtained by other methods should be made with care. Patient-side POC operation and short run-time (15 min) should facilitate routine use.